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Centerline

An Environmental News Quarterly, From the NCDOT Office of Natural Environment

Viewpoint: From the Design Perspective on the Merger 01 Process

By: Deborah Barbour, PE, State Design Engineer, Highway Design Branch
dbarbour@dot.state.nc.us

Earlier in my career I can remember when the design process moved ahead and was sometimes independent of the planning and environmental process. In some instances, the project right of way plans were completed and placed "on the shelf" waiting for the completion of the final planning document, permit application, and permit issuance. In the mid to late 1990's we started having problems with this concept. We began to find that our project designs had not either avoided or minimized environmental impacts. At the time of the project letting date, we found ourselves revising horizontal alignments, and adding or extending bridges to avoid very high quality environmental resources.

These problems were very frustrating and in the worst cases required additional work for all seven units within the Design Branch. After we had performed the surveys, prepared the plan sheets, developed the roadway and hydraulic design, gathered Geotechnical information, designed the structures, and finalized the letting plans, we were being asked to make major changes within the project design.

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this issue:

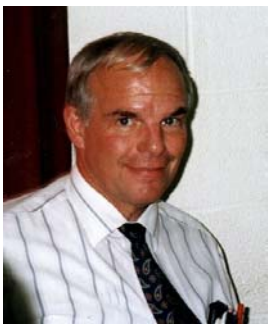
Geotechnical Unit Manager Retires

By: Byron Moore, PE, Natural Systems Engineer
bmoore@dot.state.nc.us

Bill Moore has shown through his actions and those of his Geotechnical Unit that he is committed to providing North Carolina citizens with improved transportation facilities while protecting the state's natural resources. We have mixed feelings about sharing the news that Bill Moore is retiring this month after 32 years of faithful service. We are happy for Bill but saddened that he will be leaving the department. The NCDOT Geotechnical Unit, under Bill's guidance, plays an important role in NCDOT's Wetland Mitigation program.

Over the past few years, wetland mitigation has become a growing facet of NCDOT. Offsetting wetland and stream impacts through mitigation is just one way the Department has expanded its environmental stewardship. Geotech's responsibilities include installing, reading, and maintaining approximately 800-1000 groundwater, surface water, and rain gages across the state. Geotech personnel from the Raleigh, Greenville, and Charlotte offices coordinate with PDEA personnel in helping DOT assess 35-50 wetland mitigation sites yearly.

Once a potential mitigation site is identified, Geotech may be asked to install gages to determine existing groundwater conditions. This involves hand-augering holes across a site (often in less than favorable conditions). Usually 40-inch groundwater gages are then installed in these holes. The gage is packed in the hole with sand and sealed with a bentonite clay plug. If the site is difficult to access, the auger, gages, sand, and bentonite all have to be transported across the site by hand.



Geotech installs gages after a new mitigation site is constructed. Once the gages are installed they are downloaded once a month during the growing season. If any gages are malfunctioning they are refurbished or replaced. The information that is downloaded is sent to PDEA personnel in Raleigh for evaluation. This

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It was and has been extremely time consuming and difficult for us to make major design changes so late into the project development process. It was also frustrating that we could no longer make our scheduled letting dates and the re-work that was being required had not been foreseen or factored into our workload. At this point, we questioned why all this re-work was necessary and why we couldn't obtain an environmental permit for our completed designs.

I believe that our environmental education process began with the advent of the Merger process. The Merger process required us to work more closely with the environmental agencies and our planners in the development of the project designs and the gathering of design information. Through early coordination with the project team members and project stakeholders, we began to know and gain a better understanding of the concerns earlier in the project development process. Also, by having the wetland and stream delineations in the preliminary design process, we could try to produce designs that avoided where feasible or minimized impacts to the environmental resources.

At this time, the Merger process has not had sufficient time to prove all of its benefits. We have had too many projects in the system that were completed prior to the Merger ("pipeline projects") and projects where planning was already underway that we have not been able to realize the full benefits of the Merger process. However, the problems that we had kept encountering were severe enough to warrant a re-examination of the permitting process.

In May of 2001, an Inter-agency group composed of DOT, DENR, and US Army Corps of Engineer employees identified needed changes to the permitting process. These changes resulted in a re-vamping of the Merger process or a revised process that we are now calling the
Merger 01 process. The Merger 01 process will be of vital importance to the Design Branch in reducing the amount of re-design work that is required.

Within the Merger 01 process, bridge locations will be identified between Concurrence Points 2 and 3 (between the selection of reasonable and feasible alternatives and the selection of the least environmentally damaging practicable alternative.) This should eliminate the problem of having to add or extend bridges late into the design phase. Concurrence on impact minimization (Concurrence Point 4A) will be achieved at the time the alternative is selected or soon thereafter. This will reduce the likelihood of additional roadway design alignment revisions later in the development of the right of way plans.

Also of importance is the addition of new concurrence points to review the hydraulic design at its 30 percent complete stage (Concurrence Point 4B) and at its completed stage (Concurrence Point 4C). Again, these concurrence points should help to reduce hydraulic design changes late in the project development process and provide the agencies an opportunity to review the permit drawings before the permit application is sent.

In summary, the Merger 01 process will provide for a more efficient project development process. This process will continue to ensure concurrence by project team members at key decision points during the development of the project while minimizing the amount of redesign work that is required. The Merger 01 process will also continue to ensure that project decisions are made that consider the human and the natural environment. The result will be projects that minimize where practicable impacts to both the human and natural environments and still produce project designs that that are safe and meet the purpose and need of the project.

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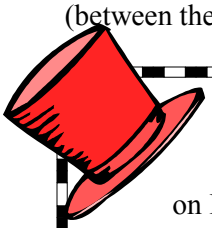
information is used to compile yearly monitoring reports on each mitigation site. These reports are submitted to federal and state regulatory agencies for comment and review. A yearly meeting is held to address agency comments and concerns. Geotech personnel are present at this meeting to answer any questions about specific gage problems or site conditions.

Bill Moore's role as Geotech Manager has been integral in the Functions of the Geotech Unit. His role will be greatly missed and we hope it serves as a model for the next manager. We wish Bill a happy retirement. Congratulations!



Hats Off to Jared Gray

Congratulations Jared and Michelle! Environmental Specialist, Jared Gray and his wife Michelle, have a new addition to their family. Michelle gave birth to a baby girl, Maya Mikayla, on February 28, 2002. All are doing well and we wish them much happiness.

Hats Off to Jim Hauser

Thanks to Jim Hauser for spending 1 to 2 days a week in Division 1 until they recently filled their DEO position. Jim assisted with permit issues and other environmental concerns as they arose. Thanks for bridging the gap Jim.

Winston Salem Noise Wall

By: Azam M. Zzimi,k PhD, PE and Ms. Marie Sutton
Azimi@dot.state.nc.us, mlsutton@dot.state.nc.us

Invited Article: Featuring Articles from Other Units that Relate to Natural Systems.

NCDOT has a long history of using recycled and solid waste products in its construction and maintenance projects. However, since 1991, the requirements of G. S. 136.28.8 (b) which mandates the Department to use recycled materials in highway construction projects, further expanded this program. This law specifically requires the Department to utilize rubber from tires for pavements, subbase materials, and other appropriate applications consistent with economic feasibility and applicable engineering and environmental guidelines. To comply to this requirement, the Department has aggressively pursued its evaluation and utilization of solid wastes and recycled products. Recycling endeavors have been continuing in the areas of research activities, pilot projects, literature research on a national level, outreach to private industries; to assess potential utilization of various solid wastes and recycled products, review of specifications, to enhance the Department's acceptance and utilization of solid wastes and recycled products.

As part of this program, a noise wall was installed on US 421 west of I-40 in Winston-Salem, (U-3829, let October 1999), utilizing approximately 8,000 scrap tires. It is an effective way to fight the highway noise with the same tires that cause it while diverting scrap tires from waste stream.

The wall is constructed from structural planks made by combining a grounded, recycled rubber core within a fiber-reinforced composite channel. The structural channels are made by using a fiberglass pultrusion process. Glass reinforcements are combined with thermosetting resin, flame retardants, U.V. stabilizers and other performance enhancers to form a permanent, rigid closed channel.

The core, or recycled tire rubber and polyolefin portion, is mixed with flame-retardant additives and shredded recycled plastic scrap, creating the sound-attenuating surface.

The wall was reviewed and approved by the New Products Evaluation Committee and the Research and Analysis Unit prepared a work plan for the experimental use of the wall design and will perform periodic performance evaluations.

The noise wall, Carsonite DB Minus, was manufactured by Carsonite International in their plant, located in South Carolina. In order to meet the Department's annual goal to utilize one million tires in construction and maintenance operations, the special provision required that the scrap tires used were pulled from North Carolina's waste stream.

The tires were processed in Winston-Salem and then shipped to South Carolina to be placed inside the wall panels. The wall sections were put together before shipping to the construction site. The panels were lighter in weight than conventional concrete panels, saving construction time.

For further information on this wall as well as the Departments Recycling and Solid Waste Management Program, please contact Azam Azimi, Ph.D., PE; or Marie Sutton in the Value Management Section; Design Services Unit.

Freshwater Mussel Workshop

By: Tim Savidge, Environmental Officer
tsavidge@dot.state.nc.us

Freshwater mussels are considered to be the most imperiled faunal group in North Carolina. Nearly 70% of the 60 recognized mussel species documented from the state are considered to be in some degree of peril. Seven of these species receive protection under the Endangered Species Act. The cumulative effects of the modification of aquatic habitats through impoundments, channelization and dredging, along with sedimentation and water pollution has resulted in a dramatic decline of the North American mussel fauna in this century

Due to an increased number of mussel species receiving protection in NC, as well as the discovery of new populations (expansion of known ranges) of many of these species, the number of NCDOT projects requiring mussel surveys has increased dramatically in the last few years. The task of keeping up with the survey demand has been difficult for the Natural Resources Staff, and this problem has been compounded by the loss of key personnel that had experience conducting mussel surveys. The DOT has close to 200 Transportation Program Projects (TIP and Division Projects) that require mussel surveys. This backlog of projects needing surveys created a bottleneck in the permitting process. In an attempt to maximize the efficiency of how projects are handled in the NEPA and SEPA process,

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Tim Savidge conducting the workshop with Jeff Burleson, Sharon Snyder, & Mike Wood

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a new organizational unit (Strike Team) was created to deal exclusively with Protected Species issues. One of the tasks of the Strike Team is to conduct mussel surveys for TIP and Division projects.

In an effort to provide training to the staff with regards to identification of freshwater mussels NCDOT enlisted the help of the North Carolina State Museum of Natural Sciences. Dr. Art Bogan the curator of aquatic invertebrates with the museum conducted a three-day training workshop addressing freshwater mussel biology, taxonomy and identification. Dr. Bogan is world renowned for his research and knowledge in the field of mussel taxonomy. In preparing for this workshop Dr. Bogan put together a "working key" of the mussel fauna of North Carolina. This key will be a useful tool for scientists working with the mussel fauna of North Carolina. A total of 24 NCDOT employees, including 13 of the 14 Division Environmental Officers, as well as members of the Strike Team and Natural Resources Section of PDEA attended the workshop.

This workshop was very successful and serves as a good introduction to mussel identification. The workshop needs to be followed with extensive experience in the field conducting surveys. The consensus of mussel researchers is that it takes at least 2-3 years of working in the field with someone qualified to become competent in mussel identification. Tim Savidge of the Strike Team will continue with the training process of the staff, by conducting field seminars dealing with mussel survey methodologies and field identification.

NCDOT's "Let" Review Process

By: Beth Harmon, Information Processing Tech.
bharmon@dot.state.nc.us

A primary responsibility for the NCDOT is the construction of transportation facilities which allow the movement of people for commercial and recreation purposes. In order to meet the needs of their customers, all companies must have a schedule of product delivery. The NCDOT is no different. Most of the NCDOT's product deliveries are the construction or maintenance of highways and our schedule is called the "let list".

Typically, the let list is comprised of projects from all modes of transportation including highway, railroad, and ferry. There are no aviation projects awarded by the NCDOT because all aviation activities are controlled by the Federal Aviation Administration (FAA). Most of the projects appearing on the let list are highway related such as the improvement or relocation of highway facilities and the construction or replacement of bridges. The type of work can range anywhere between resurfacing an interstate or the construction of a new facility designed to provide traffic congestion relief to the construction of new ferries or ferry facilities. The let list is derived from the Transportation Improvements Program (TIP) and Division Office maintenance projects. The TIP consists of all projects located throughout the state and is modified by the NCDOT's Program Development Branch and approved by the Board of Transportation (BOT) every two years.

The let lists are comprised of projects that are tentatively scheduled to begin construction within a specified time period but for various reasons they are often modified. There are several time periods for the let list with the two most popular being the 12- and 24-month let lists. The 12-month let list is available to the general public via the NCDOT's website on a monthly basis and the 24-month let list is an in-house publication for NCDOT employees. The 24-month let list is produced about every other month.

The primary focus for the NCDOT is the 12-month let list and maintaining those project schedules. It contains the projects that are the most eminent for construction. Any revisions requested to a project schedule on the 12-month let list must be approved prior to executing the change.

Once a month, a series of meetings are held with various NCDOT branch representatives to discuss project related issues on the projects on the 12-month let list and the "13th month list". The NCDOT Branches involved on the committee are Highway Design (Design Services, Roadway Design, Structure Design, Hydraulics, Right-of-Way, Program Development, and PDEA. At this meeting, issues that could affect the tentative let dates for projects on the 12-month let list are discussed and assistance from other NCDOT branches is requested, when appropriate.

The 13th month let is a listing of projects to be added to the next published version of the 12-month let list. The committee discusses all proposed projects on the 13th month let list to determine if they are warranted for inclusion to the 12-month let list. For the most part, any project on the 13th month let list with outstanding unresolved issues are not added to the 12-month let list. Sometimes, due to reasons beyond the control of the committee, projects are added to the 12-month let list with the unresolved issues.

Once projects are added to the 12-month let list, it is the responsibility of all NCDOT employees assigned to the project to maintain the schedule if possible. There are always new issues looming on the horizon that cannot be predicted during the planning phase or review for addition to the 12-month let list.

Acquisition of Red-Cockaded Woodpecker Habitat in Hoke County

By: Hal Bain, Natural Systems Unit Head
hbain@dot.state.nc.us

"Ms. Katherine Skinner, Executive Director of the Nature Conservancy praises NCDOT's efforts."

The North Carolina Department of Transportation (NCDOT) has acquired 2,500 acres of Red-cockaded Woodpecker (RCW) habitat in Hoke County, NC. The property is currently home to five RCW colonies. The site borders the southern side of Ft. Bragg and extends southward to US 211. The tract will be used to mitigate impacts of highway construction projects in the Sandhills area, which includes the counties of Anson, Cumberland, Harnett, Hoke, Moore, Montgomery, Richmond, and Scotland.

Secretary of Transportation, Lindo Tippett, announced the acquisition of the tract at a special ceremony on the site in Hoke County on January 29, 2002. Secretary Tippett was joined at the announcement by Katherine Skinner, Executive Director of the Nature Conservancy's N.C. Chapter (TNC), Sam Hamilton, Regional Director of the U.S. Fish & Wildlife Service (USFWS), Colonel Tad Davis, Garrison Commander at Ft. Bragg and John E. Peckman Chairman of the North Carolina Wildlife Resources Commission (NCWRC). Approximately 100 additional public officials, staff and private citizens were also in attendance.

"We're very grateful to Secretary Tippett for his proactive approach to protecting the environment," said Skinner. "This tract is important for its wealth of plant and animal life. With this acquisition, we'll preserve a significant portion of the sandhills landscape, and at the same time, provide a buffer for important training areas at Ft. Bragg."

"Bruce Sorrie, Ecologist, leads trail discussion."

NCDOT paid $5.3 million for the property. An additional $600,000 will be donated to The Nature Conservancy to manage and enhance the woodpecker habitat. Management of the property will include enhancement (through the use of controlled burns) of existing and future RCW habitat on the site for creation of additional colonies. The ultimate goal of this partnership is to preserve and enhance RCW habitat and to proactively establish mitigation for impacts to RCW habitat that may result from future NCDOT projects

For more information on the red-cockaded woodpecker, please contact Hal Bain, Natural Systems Unit Head, Project Development and Environmental Analysis at NCDOT, 919-733-7844, ext. 309. (http://www.fws.gov/r9endspp/i/b4a.html)

"Red Cockaded Woodpecker"

Office of Natural Environment—Cross training

By: Charles Cox, PE, Natural Systems Engineer
ccox@dot.state.nc.us

When NCDOT's mitigation program began several years ago, Roadway Design and Hydraulics Units were primarily used to complete the mitigation designs for the Office of Natural Environment. However, in the last few years, these two units have chosen to phase out of the process due to an overwhelming highway design workload. Therefore, this Office has moved on to the private sector and now utilizes ten private consultant firms who handle the design of wetland and stream mitigation projects. This Office currently has four engineers that manage these consultants during the design phase of mitigation projects. While the end products from these consultants are generally good, NCDOT management feels the need to have in-house staff available to handle some of the design work.

To help alleviate this situation, this Office has worked with other design groups within NCDOT to implement a cross-training program for our engineers. Cross-training mainly involves the Natural Environment engineer spending 1 to 2 days per week (for several months) with Hydraulics and Roadway Design to learn the basics of design, with the final result of developing construction plan sheets. For training purposes, smaller mitigation projects are kept in-house rather than farmed out to the consultants. So far, three engineers have experienced this opportunity, with the others scheduled to follow soon.

Why cross-train? Two primary benefits are anticipated:

1. QA/QC: The training of our engineers in "design" matters will result in a more effective review of the consultant work and will reduce the reliance on reviewers outside this branch. This will translate to fewer changes during the construction phase and fewer supplemental consultant contracts.
2. Internal Design Capability: By training our engineers, the Office of Natural Environment is better prepared to tackle small, emergency projects and provide in-house design. Properly implemented, in-house designs can streamline the design process. In many cases, the Natural Environment engineer can work with the construction personnel within the 14 division offices to streamline the construction process by providing design expertise for construction changes.

Several projects have been completed or are underway with in-house designs:

USMC Marsh: This site is a coastal marsh situated within Camp LeJeune Marine Corps Base in Onslow County. The original construction was completed in 1999, but the final elevations were discovered to be too high. It was decided that the remediation design of this project would be completed in-house, since no consultant had previous experience with the project and the work was so minor. Some time was saved by redesigning in-house, rather than spending extra time developing scopes of work and man-day estimates with private firms.

Spring Valley Park: This site is a stream restoration design in Greensboro, which will be totally designed in-house. This project has already helped the Natural Environment engineer be exposed to various aspects of design, such as hydraulics design calculations, natural stream design, micro station training, and the skill in laying out construction plan sheets. The construction plan sheets are anticipated to be completed later this year.

Has cross training worked? For those who have already gone through the process, the answer is "yes"; however, it has been a slow, tedious, and eye opening process. The workload of the engineers has prevented the cross training from being completed in a short period. Fortunately, the general exposure in the training arena has paid off by improving our understanding of the consultant work (which helps with man-day estimates), better accountability with the consultants (catching errors in design), and has improved the quality of work completed by this Office. This opportunity also allows the Natural Environment engineers to flex technical aspects of their engineering profession and gives them another "tool" to add to their toolbox. The Office of Natural Environment is committed to continuing exposing their engineers to this type of training in the future. While it is not anticipated that consultants will ever be phased out, this training gives this Office more options in dealing with the challenges of mitigation.

Project Spotlight: US 117 from Goldsboro to Wilson
A Long, Bumpy Road

By: Cindy Sharer, PE, Project Development Unit Head
csharer@dot.state.nc.us

US 117 Bypass (TIP No. R-1030), is a 23-mile freeway on new location from US 70 in Goldsboro to the US 264 Bypass of Wilson. The freeway will improve regional access and is a portion of a proposed future connector between I-95 and I-40. The central portion of the project is currently under construction. The southern end will be let in 2002 and the northern end in 2003. Many local officials and residents think the new freeway will pump some economic vitality back into the Wayne/Wilson County area. The hog and tobacco industries, staples of the local economy, are both suffering.

Planning and environmental studies began in 1988. Numerous alternatives were analyzed. A Draft Environmental Impact Statement (DEIS) was signed in 1992, a Supplemental DEIS signed in 1995, a Final EIS signed in 1997, and a Record Of Decision (ROD) was approved in 1998. The 401 Water Quality Certification and the 404 Corps of Engineers (COE) Permit were received in 2000.

The selected alternative starts with an interchange at US 70, passes through developed areas of northwestern Goldsboro, traverses a rural area west of existing US 117 and terminates with an interchange with the new US 264 Wilson Bypass. The study corridor includes several large historic farms, valuable wetlands such as Nahunta Swamp and Great Swamp, and the edge of Goldsboro's Little River Watershed Critical Area. By working with the State Historic Preservation Office (SHPO), the US Army COE, the Division of Water Quality (DWQ), and other agencies throughout the planning and permitting processes, impacts to these resources were avoided and minimized. Through citizen participation and sensitive design, impacts to communities and relocations were minimized.

One small middle class neighborhood, however, is severely and unavoidably impacted by the project. Two residents of the Guilford Street neighborhood filed a lawsuit against DWQ for issuing the 401 Water Quality Certification. Among other issues, the plaintiffs claimed one of the preliminary alternatives rejected early in the planning process was actually a practicable alternative to the selected alternative. This preliminary alternative avoids the Water Quality Critical area - and the Guilford Street neighborhood - but has serious design problems and impacts many businesses and low income homes. A hearing in the case of McKeel and Getchell v. NCDWQ and NCDOT was held before an administrative law judge (ALJ) last May. In October, the ALJ ruled against DWQ on two of the five issues presented. He determined that DWQ did not "meaningfully examine" cumulative impacts associated with the remaining links of the interstate connector; and that DWQ did not comply with the state's Environmental Policy Act by failing to prepare the appropriate environmental document before issuing the Water Quality Certification. He also recommended that DWQ declare the Certification void. The NC Environmental Management Commission (EMC) rejected the ALJ's recommendation during its February 14 meeting. The EMC thus validated the process DOT and DWQ used for project planning and evaluating impacts.

R-1030 Guilford Street neighborhood, Wayne County

The decision of the EMC could possibly be overturned on appeal by the Superior Court. That action, however, could take years. Meanwhile, DOT continues to acquire right of way and build sections of the project.

Planning was a long, bumpy road for the US 117 project.

Note, the new address for the NCDOT website is: www.ncdot.org
Improvements have been made and the site is ADA compliant, and looks great!
Coming Soon:
Centerline will be available on the internet through the Natural Systems web page on the NCDOT website at www.ncdot.org/planning/pe/naturalunit/centerline

Culvert Dilemmas

By: Mark S. Davis, Division 14 Environmental Officer
markdavis@dot.state.nc.us

DEO Perspective: Featuring an article from a Division Environmental Officer.
This quarter's segment is brought to us by Division 14, located in the Mountain Region of the state.

NCDOT is faced with many unique problems when constructing roads in the mountain region of the State. Pipe installation at stream crossings must be in compliance with the 404 US Army Corps of Engineers (USACE) and 401 Division of Water Quality (DWQ) permit conditions upon project completion. These conditions require that pipes be installed 1-foot below the existing streambed elevation to provide "connectivity" between upstream and downstream reaches for aquatic organism passage and physical processes such as sediment and debris transport. Properly installed pipes allow natural stream bottom materials to become established in the culvert and will provide sufficient water depth for fish passage during periods of low flow, in addition to eliminating the "hanging culvert" at the outlet end.

One problem facing Division 14 personnel is maintaining this connectivity in areas of high stream gradient. The typical secondary road in Division 14 is located adjacent to a stream in fairly steep terrain. Generally pipes are installed 1-foot below the existing streambed on the natural stream gradient, which typically ranges from 2%-4%. At this gradient, it is difficult to maintain natural streambed materials in the culvert during periods of high flow. Another problem resulting from high flow is the formation of a "scour hole" at the culvert outlet, which results in the dreaded "hanging" culvert and eroded stream banks.

Division personnel have been experimenting with several techniques to eliminate these problems in the field. One technique is the use of pipe-arches instead of circular pipe. Pipe-arches provide more cross-sectional area and accommodate bankfull flows more efficiently, thus reducing flow velocity and scouring at culvert outlets. Baffles have also been used to reduce flow velocity and improve retention of substrate materials within culverts.

Another technique is the installation of a grade control structure (rock weir) downstream of the culvert outlet, which backs water up in the culvert. As a rule of thumb, the rock weir should be constructed at least two stream widths downstream of the culvert outlet. This "backwatering" reduces flow velocity, allows substrate materials to settle out in the culvert and provides sufficient water depth for aquatic organism passage, especially during periods of low flow.

These techniques function well in streams with slopes up to 5% and provide valuable resting and rearing habitats for fish migrating upstream. However, improper installation of a weir could impede fish passage as well as cause stream channel instability. If anyone would like additional information, please contact me at the Division office.

Mountain Culvert

DETOURS

Five specimens of Mussels were observed in a mountain river system How many of these were listed on the Threatened and Endangered Species list?
Unscramble the letters and you can answer the question...
vilvabe _ _ (_) _ _ _ (_)

Treatbsus _ _ _ _ _ _ (_) _ _

Lhesl _ _ _ (_) (_)

Tilerf redefes _ (_) _ _ _ _ (_) _ _ _ _ _ _

Answer: ___ ____ specimens were endangered

Solution on page 11

Process Improvement Update

By: Ehren Meister, NC Governor's Public Management Fellow, Office of Planning and Environment
emeister@dot.state.nc.us

This article serves as a follow-up to the article, "Improving the Environmental Process: An Interagency Initivatie" by: Julie Hunkins in the "July 2001 " Issue 6 of Centerline.

On May 7, 2001 the NC Department of Transportation (DOT), the NC Department of Environment and Natural Resources (DENR), and the US Army Corps of Engineers – Wilmington District (USACE) formalized a commitment to jointly sponsor Permit and Mitigation Process Improvement initiatives. The specific goals of the initiatives include improving overall workflow effectiveness and efficiency, maintaining long term relationships through mutual problem solving, and producing measurable results that will benefit the agencies and public served.

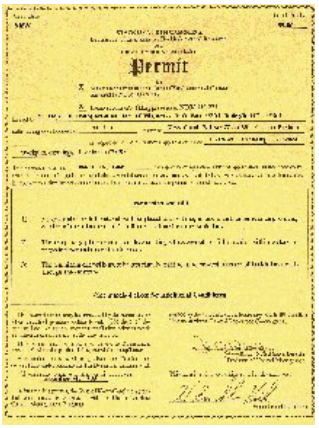
The Permit Process Improvement initiative has been underway since early last year. Following the analysis of the existing process, modifications to the process were proposed, and implementation began. Thirty-one teams were developed around the actions that were needed to successfully put the new process into motion. A Coordination Group was created in July 2001 and now serves to oversee and guide the work of the teams, as well as keep the sponsors informed on the initiative's progress.

The Coordination Group consists of individuals from the three sponsor agencies that are intricately involved in the decision making process: USACE, DENR, and DOT. The Coordination Group first reviewed, combined, and prioritized the thirty-one action items. In November, the first eleven teams were launched to begin work on the most critical action items. Teams consist of knowledgeable individuals from more than ten agencies and divisions. A charter has been prepared for each team that identifies each team's mission, goals, deliverables, and timeframe.

Some of the team action items include training for the NEPA/404 Merger '01 Process, developing an interagency communications plan, developing a high quality resource list for avoidance and minimization, and reviewing resource requirements for implementation of the new process. Teams have completed between five and seventy percent of their work and many have already begun implementing recommendations. To monitor the development, a systematic reporting process has been employed to track the progress of each team and to communicate actions to the Coordination Group and Sponsors. In the coming months, more teams will be launched for the second and third phases of the implementation. The anticipated completion date for all teamwork is in the summer of 2004.

The Mitigation Process Improvement initiative is also currently underway. Its process mission is to develop a structured mitigation process that supports the timely delivery of NC's Transportation Program while appropriately compensating for unavoidable and minimized wetland, stream, and buffer impacts. This initiative is undertaken with the overall purpose to improve the effectiveness and efficiency of the DOT/DENR/ USACE compensatory mitigation process. This process improvement initiative is highly complex and involves numerous representatives from various state and federal resource agencies.

Participating agencies and individuals are engaged in the improvements and are very excited about the positive potential of these process improvement initiatives. Look for further details about these process improvement initiatives in an upcoming issue of *Centerline.*


Permit

Database Management

By: Christie Murphy, Computer Consultant
cmurphy@dot.state.nc.us

The Office of Natural Environment has been working diligently to develop a database to manage the wetland and stream mitigation program. The database is being developed to plan for the implementation of mitigation projects to ensure that unavoidable impacts to aquatic resources resulting from transportation projects are mitigated in the most effective manner. This will ensure that project schedules are maintained and environmental impacts are offset. The database will assist in tracking and managing essential data connected with mitigating for wetland and stream impacts associated with TIP road projects. Mitigation sites must be implemented well in advance of TIP construction let dates.

The database has been created to track information on all TIP projects, including let dates, TIP numbers, project numbers, divisions, counties, personnel associated with the projects, and project descriptions. This information is downloaded from the PMSS mainframe system. The database also includes the SWAMP02 and STREAM02 impact numbers. These numbers are estimated wetland and stream impacts. Data for wetland impacts, stream impacts, and the TIP 2002-2008 breakdown was placed in a Geographical Information System (GIS) layer. Each TIP project was then buffered to a particular width depending on the type of project. The TIP buffer was then layered with the wetland and stream impacts to get an average of wetlands and streams that will be impacted from each project. The natural systems specialists in the Office of Natural Environment enter data in the database for projects that have been delineated and have completed permit drawings. Once the specialists know the actual number of stream and wetland impacts, they enter them into the database at which time the SWAMP02 and STREAM02 numbers become irrelevant.

GIS was also used to develop a database of the NCDOT's existing mitigation sites by location, amount, and habitat type. Our intent is to get all information for TIP projects and wetland and stream mitigation sites into one database. The Office of Natural Environment's goal is to have a North Carolina Map that one can click on any county, mitigation site, or TIP project to get various types of information regarding a TIP project and its' associated mitigation site. This database system is needed to coordinate the mitigation needs associated with the TIP. The structure is in place, but vast amounts of data are still missing.

Wendee Smith, former employee, with the Landmark Design Group provided assistance to Christie Murphy with the Geographical Information System (GIS) portion of our new database. The Office of Natural Environment wishes to give the NCDOT GIS Unit and the TIP Unit in the Program Development Branch a special thanks for all the information and hard work they provided to our office while gathering the resources and information to get our database up and running.

Recent Staff Additions

The Office of Natural Environment would like to welcome it's new employees. Above picture from left to right: April Helms, Byron Moore, Alexis Baker, T. J. Pulley, and Ed Hajnos. Bottom picture from left to right.: Neil Medlin and Eric Severson.

Employee Spotlights

Alice Gordon

Alice Gordon is an environmental specialist with the Office of Natural Environment, TIP management Team. Alice received a Bachelors of Arts Degree in Biology from Wheaton College in Norton, Massachusetts. She went on to attain a Masters in Biology & Biochemistry from Western State College in Gunnison Colorado, and continued with some post-graduate work at the University of Colorado in Boulder and the Colorado School of Mines in Golden. She is a dedicated Bronco fan.

Alice spent four years in Switzerland using her biochemical skills in the field of immunology. She went on to work as an environmental consultant for 15 years in Colorado. Alice rounded out her environmental expertise in locations from Alaska to New York before joining the NCDOT in August of 1995.

Alice brings to the DOT a virtual encyclopedia of environmental regulatory expertise. She has worked with the National Environmental Policy Act (NEPA) and the ensuing regulatory documents since their inception. Alice comments that, "All of the environmental regulations filled a notebook less than 1/4 inches thick when they started, now they fill libraries", and she has had to keep up along the way.

Mountaineering and rock climbing have been a part of Alice's leisure activities. The sport was taken up by Alice while in Switzerland, and further pursued in Colorado. There she was part of a climbing club, taught climbing and led trips to Europe and the Rockies.

Jim Hauser

Jim Hauser is the Division Environmental Officer (DEO) Coordinator for the NCDOT Office of Natural Environment. Jim grew up in the Raleigh area. He earned a Bachelor of Science degree in Forestry from N.C. State University in 1990 and a Master of Science degree in Forest Ecology from Virginia Tech in 1992.

After two years of service in the Peace Corps, Jim returned to North Carolina and started with the NCDOT as a temporary biologist. In 1996, he accepted a full time position with the Florida DOT in their Wetlands Program. In 1998, he returned to NCDOT to work in the Wetlands Mitigation Unit of the Office of Natural Environment. Jim has worked in various aspects of natural resources, permitting and mitigation, and now as the DEO Coordinator. He assists the fourteen NCDOT Divisions with natural resource issues associated with maintenance activities.

Jim takes his enthusiasm for the environment with him away from work as he enjoys many outdoor activities including kayaking, hiking, and cycling. Jim also enjoys photography and traveling with his wife Lauren.

We say goodbye to Clay Willis

Clay Willis was recently promoted to Division Environmental Officer in Division 1. Clay's promotion is very deserving and we are happy for him, but it does mean he will be leaving PDEA. Clay will be moving to the Division Office in Edenton where he can pursue his love of coastal recreation in his leisure time. Clay has served 2 years with the Office of Natural Environment. We will miss his expertise and commitment.

Clay we wish you continued success and we look forward to working with you in your new role.

Detour Answer: Solution: Bivalve, Substrate, Shell, Filter Feeders. The parenthesized letters are pulled out and unscrambled to spell out ALL FIVE.

Contact Information
NCDOT
Project Development &
Environmental Analysis

Main Office: (919) 733-3141

Fax: (919) 733-9794

Contact Information
Newsletter coordinators
V. Charles Bruton, Ph.D.:
(919) 733-7844 (ext. 308)
cbruton@dot.state.nc.us

J Locke Milholland:
(919) 715-5485
jlmilholland@dot.state.nc.us

Christie Murphy:
(919) 715-2405
cmurphy@dot.state.nc.us

Our Mission Statement

Each of the teams in the Office of Natural Environment is responsible for natural resource investigations, obtaining environmental permits, developing wetland and stream mitigation plans, and implementing the construction of mitigation sites.

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